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10/828,345	04/21/2004	Hyun-Kyung Choi	P-0658	6695

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EXAMINER	
LEE, BETTY E	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/828,345	CHOI, HYUN-KYUNG	
	Examiner	Art Unit	
	Betty Lee	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims **22, 23, and 24** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 lines 2-4 recite "transmitting a pertinent IP frame to a second network by transmitting the IP frame passing IP packet processing directly to a modem chip." It is unclear whether the IP frame is transmitted to the modem chip or the IP packet is passed to the mode chip. There is a similar problem in claim 23.

Claim 24 recites the limitation "the communication network" in line 3. There is insufficient antecedent basis for this limitation in the claim. There is a first network and a second network in the claims. If the communication network refers to one of these networks, it is unclear to which it is referring.

DETAILED ACTION

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **28 and 31** are rejected under 35 U.S.C. 102(e) as being anticipated by Hayem et al. (US 2004/0185899).

Regarding claim 28, Hayem teaches transmitting to a first network using a first communication protocol (see paragraph 38 and 40; The dual-mode device transmits to a first network using the particular bearer of the first network.);

transmitting to a second network using a second communication protocol (see paragraph 38 and 40);

receiving data from the first network (see paragraph 38 and 40); and

receiving data from the second network (see paragraph 38 and 40);

wherein data is received from the first network by the first communication protocol and data is received from the second network by the second communication protocol (see paragraph 38 and 40; The communication is received using the particular bearer/protocol of the network.).

Regarding claim 31, Hayem further teaches wherein the second network is processed directly as IP frames (see paragraph 59).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims **1, 2, and 6-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 2003/0103518) in view of Hayem et al. (US 2004/0185899).

Regarding claims 1 and 11, Han teaches a single mode terminal, comprising: a video chip (see Fig. 1) having an application of packet data services (see Fig. 1 Box 111) and a first communication protocol (see Fig. 1 Boxes 103, 105, 107, and 109); and a first physical layer coupled to the video chip through an interface (see Fig. 1 Box 101) and having a protocol stack relating to a first communication network (see Fig. 1 Boxes 103, 105, 107, and 109). Han teaches all the subject matter of the claimed invention with the exception of the physical layer containing a modem chip, a second data communication protocol, and a second network modem chip coupled to the video chip through an interface and having a protocol stack relating to a second communication network.

However, Hayem teaches the physical layer containing a first modem chip (see Fig. 10 Box 1010);

a second data communication protocol (see Fig. 10 Box 1016; The second data communication protocol is WCDMA) and a second network modem chip coupled to an another chip through an interface (see Fig. 8) and having a protocol stack relating to a second communication network (see Fig. 8 Box 716). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han. The motivation for doing so is to add a second mode to make the terminal more flexible.

Regarding claims 2 and 12, Han further teaches the first data communication protocol performs IP packet processing and performs mutual conversion of IP packets and PPP packets only in communication with the first network (see paragraph 27).

Regarding claims 6 and 7, Han further teaches the application of packet data service is directly interworked with a socket of a TCP/IP superior layer (see paragraph 24 and Fig. 1 Boxes 111 and 109).

Regarding claim 8, Han teaches all the subject matter of the claimed invention with the exception of the first network modem chip and the second network modem chip perform only functions of a modem. However, Hayem teaches the first modem chip and the second modem chip perform only functions of a modem (see Fig. 10 Boxes 1010 and 1016).

Regarding claim 9, Han further teaches the first data communication protocol, the first network modem chip and the first communication network are based in a CDMA network (see paragraph 5).

Regarding claim 10, Han teaches all the subject matter of the claimed invention with the exception of the second data communication protocol, the second network and

the second communication network are based in a WCDMA network. However, Hayem teaches the second data communication protocol, the second network and the second communication network are based in a WCDMA network (see Fig. 10 Box 1016). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han. The motivation for doing so is to add a second mode to make the terminal more flexible.

Regarding claim 13, Han teaches when a packet is transmitted from the terminal to a communication network a packet is provided to the physical layer from the video chip (see paragraphs 26 and 28), and when a packet is transmitted form the communication network to the terminal, an IP frame is received at the video chip through the physical layer the video chip performing the packet processing and interworking with a socket (see paragraph 29 and 31 and Fig. 1). Han teaches all the subject matter of the claimed invention with the exception of the communication with the second network through a second network modem.

However, Hayem teaches communication with a second network done through a second network modem (see Fig. 10 Box 1016). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han. The motivation for doing so is to add a second mode to make the terminal more flexible.

Regarding claim 14, Han teaches converting an IP packet to a PPP packet in a video chip (see paragraph 30), converting the PPP packet into a PPP frame and providing the PPP frame to a first network physical layer when a packet is transmitted from the terminal to the first communication network in packet data communication (see

paragraph 44) and receiving a PPP frame at the video chip through the first network physical layer (see paragraph 28), converting into an IP frame (see paragraphs 29 and 30), and performing packet processing and interworking with the socket when a packet is transmitted from the first communication network to the terminal (see Fig. 1). Han teaches all the subject matter of the claimed invention with the exception of the first network physical layer including a modem.

However, Hayem teaches the physical layer containing a first modem chip (see Fig. 10 Box 1010). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han. The motivation for doing so is to enable the terminal to convert digital data into analog form for transmission through a wireless medium.

Regarding claim 15, the limitations of claim 15 have been discussed in claim **9**.

Regarding claim 16, the limitations of claim 16 have been discussed in claim **10**.

Regarding claims 17 and 18, the limitations of claims 17 and 18 have been discussed in claims **6 and 7**.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 2003/0103518) in view of Hayem et al. (US 2004/0185899) as applied to claim **1 and 2** above, and further in view of Nah (US 2003/0081666).

Regarding claim 3, Han teaches all the subject matter of the claimed invention with the exception of the video chip communicates with the first network modem chip through a UART interface and communicates with the second network modem chip

through a DPRAM interface. Hayem further teaches a chip communicating with the second network modem chip through a DPRAM interface (see paragraph 62). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han. The motivation for doing so is to increase the processing speed by using a DPRAM so that data can be read and written simultaneously. Han in view of Hayem teaches all the subject matter of the claimed invention with the exception of communicating with the first modem chip through a UART interface.

However, Nah teaches a chip communicating with a CDMA modem chip through a UART interface (see Fig. 2 Box 34). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Nah in the system of Han. The motivation for doing so is to convert data into serial form.

Regarding claim 4, Han in view of Hayem teaches all the subject matter of the claimed invention with the exception of the video chip and the first network modem chip each include a UART driver in order to communicate through the UART interface. However, Nah teaches a chip and the first network modem chip each include a UART driver in order to communicate through the UART interface (see Fig. 2 Box 34; The UART driver is required to use the UART interface.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Nah in the system of Han in view of Hayem. The motivation for doing so is to convert data into serial form.

9. Claim **5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 2003/0103518) in view of Hayem et al. (US 2004/0185899) and Nah (US

2003/0081666) as applied to claim 3 above, and further in view of Lee (KR 2003084005).

Regarding claim 5, Han in view of Hayem and Nah teaches all the subject matter of the claimed invention with the exception of an IPC driver through the DPRAM interface. However, Lee teaches a DPRAM with a IPC (see Abstract). Thus, it would have been obvious to one of ordinary skill in the art to use the IPC of Lee in the system of Han in view of Hayem and Nah. The motivation for doing so is to add the benefit of an interrupt system.

10. Claims **19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 2003/0103518) in view of Park et al. (EP 1 213 941).

Regarding claim 19, Han teaches a terminal including a video chip (see Fig. 1) having a first data communication protocol (see Fig. 1 Boxes 103, 105, 107, and 109; transmitting packet data to a first network (see paragraph 28); and receiving data from the first network (see paragraph 31). Han teaches all the subject matter of the claimed invention with the exception of judging a system mode.

However, Park teaches judging a system mode (see paragraph 23). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Park in the system of Han. The motivation for doing so is to provide the mobile terminal with the best service available.

Regarding claim 20, Han further teaches the first data communication protocol performs IP packet processing and performs mutual conversion of IP packets and PPP packets only in communication with the first network (see paragraph 27).

Regarding claim 21, Han teaches all the subject matter of the claimed invention with the exception of judging a system mode. However, Park teaches the system mode is selected from a first communication network service and a second communication network service (see paragraph 23). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Park in the system of Han. The motivation for doing so is to provide the mobile terminal with the best service available.

11. Claims **22-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 2003/0103518) in view of Park et al. (EP 1 213 941) as applied to claim 19 above, and further in view of Hayem et al. (US 2004/0185899).

Regarding claim 22, Han teaches transmitting a pertinent IP frame to a network by transmitting the IP packet directly to the physical layer (see paragraph 28). Park teaches selecting the network based on system mode (see paragraph 23). Han in view of Park teaches all the subject matter with the exception of the physical layer comprising a modem chip. However, Hayem teaches the physical layer containing a second modem chip (see Fig. 10 Box 1016). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han in view of Park. The motivation for doing so is to enable the terminal to convert digital data into analog form for transmission through a wireless medium.

Regarding claim 23, Han teaches transmitting an IP frame passing IP packet processing to a PPP, converting the IP frame into a PPP frame (see paragraph 27); transmitting the PPP frame to a first network physical layer (see paragraph 28). Park teaches transmitting the data to the first network according to the system mode (see paragraph 23). Han in view of Park teaches all the subject matter with the exception of the physical layer comprising a modem chip. However, Hayem teaches the physical layer containing a first modem chip (see Fig. 10 Box 1010). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han in view of Park. The motivation for doing so is to enable the terminal to convert digital data into analog form for transmission through a wireless medium.

Regarding claim 24, Han teaches receiving packet data comprises transmitting an IP frame received from a network to the video chip when packet data is received from the communication network (see paragraph 28); and transmitting the received IP frame from the video chip to an IP protocol in order to perform packet processing and operating application of a pertinent packet data service (see paragraphs 29 and 30). Han teaches all the subject matter of the claimed invention with the exception of a second network. However, Hayem teaches a second network (see Fig. 10 Box 1016). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Hayem in the system of Han in view of Park. The motivation for doing so is to provide the mobile terminal with the best service available.

Regarding claim 25, Han further teaches transmitting a PPP frame received from a communication network to the video chip when packet data is received from the

communication network (see paragraph 48); and converting the PPP frame into an IP frame and performing packet processing in the video chip and operating application of a pertinent packet data service (see paragraph 48).

Regarding claim 26, Han further teaches the first data communication protocol and the first network are based in a CDMA network (see paragraph 5).

Regarding claim 27, Han teaches all the subject matter of the claimed invention with the exception of the second data communication protocol and the second network are based in a WDMA network. However, Hayem teaches the second data communication protocol and the second network are based in a WCDMA network (see Fig. 10 Box 1016). Thus, it would have been obvious to one of ordinary skill in the art to use the system Hayem in the system of Han in view of Park. The motivation for doing so is to add a second mode to make the terminal more flexible.

12. Claim **29, 30, 32-39, 41, 42, 44, and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayem et al. (US 2004/0185899) in view of Han (US 2003/0103518).

Regarding claims 29, 30, and 32, Hayem teaches the second network is a WCDMA system (see paragraph 59 and Fig. 10 Box 1016). Hayem teaches all the subject matter of the claimed invention with the exception of converting the data received from the first network from PPP to IP. However, Han teaches converting the data received from the CDMA network (see paragraph 5) from PPP to IP (see paragraph 48). Thus, it would have been obvious to one of ordinary skill in the art to

use the system of Han in the system of Hayem. The motivation for doing so is to allow the terminal to use a higher speed system for various kinds of communication services.

Regarding claims 33 and 37, Hayem teaches a mobile communications device, comprising:

a terminal supporting multiple packet frame modes (see Fig. 3 and 4);

a first interface (see Fig. 9 Boxes 610 and 616); and

a second interface (see Fig. 9 Boxes 708 and 716);

wherein the mobile device communicates with a first modem through the first interface, and communicates with a second modem through the second interface (see Fig. 10 Boxes 1010 and 1016).

Hayem teaches all the subject matter of the claimed invention with the exception of a protocol converter.

However, Han teaches converting the data received from the CDMA network (see paragraph 5) from PPP to IP (see paragraph 48). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Han in the system of Hayem. The motivation for doing so is to allow the terminal to use a higher speed system for various kinds of communication services.

Regarding claims 34 and 38, Hayem further teaches a first data communication protocol is used in the first interface and a second data communication protocol is used in the second interface (see paragraph 38).

Regarding claims 35 and 39, Hayem teaches the second data communication protocol supports communication in WCDMA (see Fig. 10 Box 1016). Hayem teaches

all the subject matter of the claimed invention with the exception of the first data communication protocol supports communication in CDMA. However, Han teaches the first data communication protocol supports communication in CDMA (see paragraph 5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Han in the system of Hayem. The motivation for doing so is to allow the terminal to use a higher speed system for various kinds of communication services.

Regarding claim 36, Hayem further teaches the terminal receives an IP from from the second modem through the second interface and performs packet processing (Fig. 10 and paragraph 59).

Regarding claim 41, Hayem further teaches the second interface comprises a DPRAM interface through which communication with the second modem is achieved (see paragraph 62).

Regarding claim 42, Hayem teaches the first physical layer contains a modem connected through an interface (see Fig. 10 Box 1010). Hayem teaches all the subject matter of the claimed invention with the exception of the conversion of an IP frame to a PPP frame occurs prior to transmission to the first modem through the first interface. However, Han teaches the conversion of an IP frame to a PPP frame occurs prior to transmission to the first physical layer (see paragraph 48).

Regarding claim 44, Hayem further teaches an IP frame is transmitted to the second modem through the second interface (see paragraph 59).

Regarding claim 45, Hayem further teaches the second interface comprises a DPRAM (see paragraph 62).

13. Claims **40 and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayem et al. (US 2004/0185899) in view of Han (US 2003/0103518) as applied to claim **33 and 42** above, and further in view of Nah (US 2003/0081666).

Regarding claims 40 and 43, Hayem in view of Han teaches all the subject matter of the claimed invention with the exception of communicating with the first modem chip through a UART interface. However, Nah teaches a chip communicating with a CDMA modem chip through a UART interface (see Fig. 2 Box 34). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Nah in the system of Hayem in view of Han. The motivation for doing so is to convert data into serial form.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shi et al. (US 2004/0203647), Hyvarinen et al. (US 2002/0085540), Hutchison et al. (US 2003/0211862), and Gopikanth (US 2003/0219971) are all cited to show systems which are considered pertinent to the claimed invention.

15. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as

well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betty Lee whose telephone number is (571) 270-1412. The examiner can normally be reached on Monday-Thursday 9-5 EST and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BL

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